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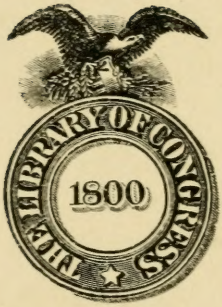

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THE

MILK TRADE

IN

New York and Vicinity,

GIVING

AN ACCOUNT OF THE SALE OF PURE AND ADULTERATED MILK—THE DAILY AND YEARLY CONSUMPTION—THE AMOUNT OF PROPERTY INVESTED IN THE BUSINESS—THE MILK-DEALERS AND DAIRYMEN OF ORANGE AND OTHER COUNTIES—INJURIOUS EFFECTS OF IMPURE MILK ON CHILDREN—ADVICE TO COUNTRY DAIRYMEN.

BY JOHN MULLALY.

With an Introduction,

BY R. T. TRALL, M.D.

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Introduction.

BY R. T. TRALL, M.D.

The intrinsic importance of the facts and figures so well presented in the following pages, ought to secure for this little book the earnest attention of the community, without introduction or commendation from any one. But, unfortunately, there is a degree of apathy abroad on the subject of milk-food, from which it has hitherto been impossible fully to arouse the public mind. It is a matter of common conversation among our citizens; it is a source of continual apprehension on the part of mothers and nurses; it is frequently asserted in the newspapers; and it is the unanimous

declaration of medical men, that thousands of children annually sicken and die in this city, from the effects of bad milk. And the same sad story is told, and the same medical testimony is repeated year after year, and yet the evil goes on unchecked—because, by this traffic men can "put money in their purses."

Were placards to be posted around the streets of this city and its suburbs, announcing in glaring capitals that the inhabitants of New York, Brooklyn, Williamsburgh, and Jersey City, pay annually the sum of THREE MILLIONS OF DOLLARS for adulterated and distillery or slop milk; and nearly *half a million of dollars* for the water with which both pure and impure milk is diluted; and that nearly two thirds of all the milk consumed in the above-named places is a spuriously manufactured article, would not the people, think you, reader, gaze at the appalling proclamation in utter incredulity or inexpressible astonishment? Would they not wonder at the indifference of the

swindled sufferers; be amazed at that silence of our municipal authorities which is equivalent to consent, and exclaim, more indignantly than usual on occasions of outrage, "Where are the Police?" But, fellow-citizens, these statements are diabolical facts and disgraceful realities.

The records of our city mortality for the last five or six years show an average number of deaths of about *seventeen thousand.* Of these seventeen thousand nearly one half are of children under five years of age, while infants less than one year old make up almost one fourth of the whole number. Thus we may calculate, so long as the present order of things continues, with almost unerring certainty, on the deaths of *eight or nine thousand children annually*, which number will, of course, augment as our population increases.

We do not see, among the returns made to the Inspector's office, any deaths from a disease called *milk-poison.* The majority are desig-

nated as having died of convulsions, marasmus, diarrhea, dysentery, and cholera infantum. Yet physicians tell us, most truly, that a large proportion of all the above prevalent diseases are caused by impure or adulterated milk. It is very difficult for unprofessional persons to perceive and understand the primary or predisposing causes of infantile diseases. The immediate or exciting causes are sufficiently apparent: as taking cold, indigestible food, etc. But in most cases these exciting causes would only induce temporary and trifling indisposition, were it not that some morbific agent or agents, operating like a slow poison, had produced a predisposition to disease; and the force of the morbific influence is proportioned always to the extent of the predisposition. The physician can, therefore, readily comprehend how the habitual use of swill milk will so impair the digestive organs, and derange the nutritive functions, that, in the warm season, when the organic

fibers are relaxed, and the determination of irritation is from the external surface to the internal mucous membrane, the slightest error in regimen may develop a fatal form of bowel complaint; or in case no material error in the voluntary habits and nursing management is committed, how the young child shall gradually pine away, decline, and die of atrophy, marasmus, or scrofula.

In hundreds of cases the symptoms of poisoning by swill milk are so obvious, that physicians at once impute the disease to this cause, and prohibit the use of milk entirely. And to this abstinence from bad milk are the patients mainly indebted for their recovery. In my own practice I have every year grown more suspicious of distillery milk, whenever I have seen a child presenting a sickly appearance, loose, flabby flesh, weak joints, capricious appetite, frequent retchings, and occasional vomitings, irregular bowels, with tendency to diarrhea, and fetid breath. This assemblage

of symptoms is often attributed to worms; but my experience has fully satisfied me that slop milk is much more frequently the cause. I have known these symptoms defy all medication, even of the Water-Cure kind, until the milk part of the diet was entirely abandoned, the parents all the while having the utmost confidence in the special honesty of *their* milkman, and fully believing that nothing but "*Pure* Orange County," ever came into their houses.

Infants and young children, however, are not the only sufferers from the swill milk trade. Those who have ingenuity enough to sell the filthy secretion from slop-fed cows, under the name of milk, have also sufficient skill in the way of dealing to make a compound of swill milk, calves' or hogs' brains, molasses, and chalk, which they sell under the name of "Sweet Cream." This, too, is always fresh from "Orange" or "Westchester" counties, "Long Island" or "Connecticut!" Those who

patronize ice-cream saloons, even the most fashionable resorts, would have a better assurance that *real* cream was employed in the preparation of cream cakes, cream pies, cream ices, and other dainty "delicacies," if they should personally see to the milking, and watch the process of setting, and skimming, and marketing, and cooking, with their own eyes.

But this subject has not merely a sectional, it has a national importance. It is not in and around New York alone that fortunes are made by the manufacture and sale of swill milk. All of our large cities, we have reason to fear, are extensively engaged in the nefarious business. And in most of the principal cities of Europe, it is known to be among the chief causes of infant mortality. And surely, if there were no other causes of infantile diseases in the civilized world, we would have no occasion to marvel that children are hurried from their cradles to their graves at a rapid

rate, however much we might deplore that ignorance which imputes to a "mysterious Providence" that which may more rationally and less blasphemously be charged to human cupidity and fraud.

And here a principle of immense importance and of universal applicability suggests itself—the relations of property to humanity. Nothing can better illustrate the grand fundamental error of the world's legislation thus far, than the people's acquiescence in the right of a rich man to get richer, although the business by which he swells his coffers costs the lives of hundreds or thousands of his fellow-beings; and this abuse of our social system has one of its strongest demonstrations in the spurious milk business.

Our statute laws and city ordinances declare, and the common law ordains, that no man shall sell poison to his neighbor under the name of food or drink; nor an article which is in any material respect different from what

it is represented to be. Yet *two hundred thousand quarts* of distillery slops are distributed among our citizens every day in the year, at four or five cents a quart, labeled "Pure Country Milk."

Nor is this stupenduous cheat done in a corner. It seeks no hiding-place, but braves the open day. Even in the densely populated parts of our city, the huge piles of dark, dingy, brick walls, from which thick clouds of smoke and vapor ascend continually, denote the distillery, where thousands of bushels of grain are daily converted into intoxicating liquor. But this is not enough. The object of the distiller is to get money. Why should he not economize? He has invested fifty or a hundred thousand dollars of capital. Why should it not be made to *pay* to the utmost? His profits in liquor-making, though great, can be vastly increased by using up the refuse slops in milk-making. Why should he not do so? Whosoever alleges that *humanity* requires of

him not to do this thing, must recollect that he has a *property* interest in the matter.

The milkmen's carts are seen, too, standing around the long rows of pestilential cow stables, and going to and fro, at all hours of the day. And, what is more remarkable than all else, these things are seen by and known to all men in the city having authority in the premises; to the Mayor; to the City Inspector; to the District Attorney; to the Aldermen and Assistant Aldermen; to the Chief of Police, and to the Board of Health. Why do none of them interfere?

Should any *poor* man, whose whole property consists in a single cow, shut that cow up in a dark, damp, close under-cellar, feed her on the slops of his kitchen, or even on the swill slops brought from the neighboring distillery, and support his family by peddling out to his neighbors fifteen or twenty quarts of *such* milk a day, does any body believe, that after the nature of his business was known, it would

be suffered to exist for a single week? No. The strong arm of authority would come down upon him. He might beg or starve, and his family go to the poor-house or *die*, before he, being a *poor* man, and hence of little consequence in the world, would be allowed to cause the death of any body.

But the rich man erects a large and costly edifice. He keeps one or two thousand cows on his distillery slops. His milk trade amounts to ten or twenty thousand quarts daily. He is a *wholesale* dealer, and hence is not to be classed with the retailer above mentioned. If the milk sold by the retailer should cause the death of *one* person he would be a fair candidate for the gallows, or liable to conviction for manslaughter in some of its degrees. But the milk manufactured and sold by the wholesaler does actually cause the death of scores or hundreds; yet who ever thinks of arraigning him for murder? He walks in "high life," flourishes among the "upper ten,"

goes in the "first society," and moves among us a very paragon of respectability!

Let me draw a brief picture for his especial benefit. Suppose a *very* poor man, who gets his living, as the manner of some is, by selling ginger cakes—five for a penny—should, in order to enhance his gains, use old, sour, musty flour, plaster of Paris, saw-dust, and impure sugar, instead of sweet, fresh flour, pure ginger, and good sugar, in the manufacture of the food he sells. Suppose, further, that this man should sell a penny or two's worth of his merchandise to some rich man's child—the distiller's in Sixteenth Street, if you please—and the child should eat the cakes, and be thrown into a fit of sickness in consequence, finally resulting in death—would not summary punishment be meted out to the offender, the *villain*, the MURDERER, on proof of such facts? Is there, in any moral sense, any difference between the *poor* cake-vender, and the *rich* swill milk-maker, except that the latter can

not plead the temptation of want, nor the palliating circumstance of seeming necessity?

Legislators have not yet, at least not generally, become sufficiently intelligent nor humanitarian, to perceive the principle of eternal right and universal justice, which asserts that no one man can have a better right to property than another has to life. As yet, in the most enlightened countries, almost the whole scope and tenor of legislation places the protection of property far above the sanctity of life. On what other supposition can any one account for the existence of such a nuisance as a distillery among us, or the toleration of the impure milk traffic, which every body knows is carried on extensively among and around us?

Our law makers and law administrators evade responsibility by affecting some vague and indefinable regard for the rights of property, the interests of business, the reserved rights of individuals, etc., as though nobody

had any business with rights save those who work mischief and scatter misery. The distiller, too, has a way of proving himself in no way morally, though he may be pecuniarily, associated with his own business. And, indeed, all parties to the fraudulent traffic seem to have conveniently easy and elastic consciences, which enable them to shirk all moral accountability. The distiller himself does not *directly* sell any of his swill milk. His hands, he appears to think, are clear enough of *that* murder. He only sells his refuse slops to others; or, rather, he keeps other persons' cows on this food, at so much a head per week. For all he *cares*, his customers, who own the cows, may feed the milk they take away from the stables to *their* cows or pigs, or eat it themselves. He *knows* they will sell it to the people under the fictitious name of "Pure Milk." But does his knowing it make it so? Such is *his* "lower law" subterfuge. And then the peddler who owns the cows, has an

equally legitimate method of "whipping the devil round the stump." He buys the milk-making slop, and pays for it. The people buy milk made of slop of him. Isn't this a fair business transaction? It is no worse for him to sell it to the people who are willing to pay for it, than for the distiller virtually to sell it to him; and as for the label, "Orange County," that is only the way of trade; and so he logically twists himself out of all original or imputed sin or iniquity in the transaction.

But I am perhaps expatiating too largely on such thoughts as the reading of the work before us can hardly fail to suggest. I will remark, however, in conclusion, that the chief and great excellency of the work, consists in its giving a fair, faithful, and impartial view of the whole milk trade—its *uses* as well as abuses. Other works have dwelt with just severity, yet almost exclusively, on the evil effects of impure milk. But this author has

given us a complete history of both good and bad milk. And unless our City Inspector, whose special duty it is to see to the abatement of all nuisances, shall turn his attention officially to distilleries and their accompaniments, the cow stables, there is little hope of any beneficial change, except in arousing the public mind to the importance of pure milk, and spreading abroad such general information as will increase the supply of the pure article, for which purpose the work now commended to the public is admirably adapted.

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The Milk Trade.

Chapter One.

First Establishment of Country Milk Dairies—Adulterated and Swill Milk—Transportation of Milk over the Harlem, Erie, and Hudson River Railroads.

It is now about fifteen years since the importance of this subject was first brought to the notice of the public, in a series of lectures delivered by Mr. R. M. Hartley, upon the use of impure and unhealthy milk, and its pernicious effects upon the general health. The facts that were then made known caused considerable excitement throughout New York and its vicinity, and the gentleman who had the hardihood to expose the evil with a view to its correction, me not only with the opposition of those interested ir the manufacture of what is called "swill milk," but was actually assaulted for his temerity. The excitement, however, was productive of good effects, and resulted in attracting the attention of the public to

the best means for the removal of the grievances complained of.

Dairies for the sale of pure country milk were then, for the first time, established, and despite the exertions of the distillers and others interested in the sale of the bad milk to injure them in every possible way, they have succeeded, to a great extent, in supplying the city with the healthy article. It will hardly be credited that, at the time the subject was first agitated, there was not one dairy in the city for the exclusive sale of pure country milk, and the only means by which it could be obtained was by having it conveyed direct from the country, in cans, to the persons requiring it. In this way the customer is always certain of obtaining it pure from the cow, for we never knew of a case in which it was adulterated by the farmer. This seems to be a practice which belongs exclusively to our city dairies and milkmen.

In fact, so apprehensive are some families as to the quality of milk that is sold in New York, that they will not purchase it at the dairies, but must have what they require for their own use sent in from the country; and these apprehensions would

seem to be well founded, if we might judge from an instance that recently occurred in this city, where swill milk was furnished in place of the pure article, and in direct violation of the contract made between the parties.

The great caution of such persons is not to be wondered at, when we consider the deleterious effects of bad milk upon the human system, and particularly upon the health of infants, whose weak constitutions render them more liable to be affected by it.

Milk is the principal article of food of all children, and when it is impure it is not reasonable to suppose that they can be healthy. Hundreds of them die annually in New York from sickness produced by it alone; but as this is a subject that would require a separate chapter, we will leave its consideration for another time.

We have said that there are dairies for the sale of pure country milk in this city, and we know, from actual experience, that it can be purchased as it is procured from the cow, but at a somewhat higher cost than it is generally furnished by milkmen. The number of persons and companies engaged in the sale of pure milk, is estimated at two hundred

and fifty, or about one half the number of those who sell the impure kind.

When we speak of pure milk in connection with city dealers, we mean to be understood as speaking only of milk that is not adulterated by the admixture of chalk or whiting, magnesia, molasses, flour, starch, and other foreign substances, but which is simply diluted with water and flavored with a little salt to keep it *sweet.* After all, this diluting it with water is perfectly innocent in comparison with the horrible, murderous system that some dairymen adopt to make the pure milk profitable to themselves and injurious to their customers. Water weakens the article, but does not render it unhealthy and unfit for the use of human beings; but when we come to speak of drinking a compound of milk, chalk, molasses (and some say calves' brains, but this we can not believe), it is another thing.

The quantity of milk manufactured in this way is not so large as that made from distillery grains and swill, and which, as we have already intimated, forms about two thirds of the quantity consumed in New York, Williamsburgh, Brooklyn, and Jersey City. A great proportion of the swill milk itself is

rendered even still more unhealthy and pernicious by adulteration. We have, at great labor and trouble, been enabled to collect the following statistics in relation to the amount of milk conveyed by the different railroads to the city. We find, from the freight account of the New York and Harlem Railroad, that the quantity sent from the different stations along this route exceeds that received over any other road. The milk is chiefly from Westchester county, which is said to contain some of the finest grazing land in the state of New York, and it is believed by some to be equal to the far-famed Orange county milk. The milk is by some considered as more healthy for children; but this may be regarded as a mere matter of fancy. The subjoined table gives the exact quantity received by the Harlem road, and the amount of receipts during the year 1851.

	Receipts.	Quarts.
January	$3,521 14	704,228
February	3,332 04	666,408
March	4,101 36	820,272
April	4,938 31	987,662
May	6,590 77	1,318,154
June	7,124 08	1,424,816
Total	$29,607 70	5,921,540

	Receipts.	Quarts.
Amount brought forward..	$29,607 70	5,921,540
July	7,546 94	1,509,388
August	6,457 22	1,291,444
September	5,392 50	1,078,500
October	4,963 68	992,736
November	4,538 89	917,778
December	4,613 96	922,792
Total	$63,120 89	12,634,178

This table gives us 12,634,178 quarts as the quantity sent over this road in one year, or a daily average of 34,614 quarts. The revenue which the company derives from this one article of freight is very considerable, amounting, as may be seen by reference to the table, to $63,120 89.

Five years ago the receipts were not more than half as large; but so great has been the demand for the pure milk, that during the present year there has been a great increase in the amount. For one day—the 11th of July, 1851—we were informed by one of the agents of this road, the total receipts of milk amounted to 40,800 quarts. The cost of transportation throughout the route is about one half cent per quart, and the milk is sent in cans capable of containing from ten to twenty, and sometimes as many as thirty gallons. To the facilities presented by this road for the transportation of milk, the pub-

lic are much indebted for the increased supply obtained during the present year. As a proof of this, it is only necessary to refer to the following table, and to compare it with that already given. It presents an accurate account of the milk receipts during the first six months of the present year :

	Receipts.	Quarts.
January	$4,767 29	953,458
February	4,673 14	934,628
March	5,602 86	1,120,572
April	6,129 07	1,225,814
May	8,226 28	1,645,256
June	9,547 95	1,909,590
Total	$38,946 59	7,789,318

During the first six months of 1851 there were 5,921,540 quarts of milk received at the Harlem Railroad depot, or 1,867,778 less than the amount transported over the same road for the first six months of the present year.

The amount of milk transported over the Erie Railroad from the date of its opening in 1842 to the close of June, 1850, amounted to 53,713,244 quarts. In 1843 it did not exceed 3,181,505 ; but each succeeding year it increased more than a million of quarts, and in 1851 the quantity supplied from the same source was 12,610,556. This presents an in-

crease of 9,439,051, for the transportation of which alone $47,195 26 were received. The following table, however, gives the monthly receipts, which will be found more satisfactory, as exhibiting the great increase which has taken place:

	Receipts.	Quarts.
January	$3,260 90	652,180
February	3,342 60	668,520
March	4,208 55	841,710
April	5,007 25	1,001,450
May	6,802 50	1,360,500
June	7,403 30	1,480,660
July	8,431 45	1,686,290
August	7,248 55	1,449,710
September	5,734 20	1,146,840
October	4,505 95	901,190
November	3,703 80	740,760
December	3,403 70	680,740
Total	$63,052 78	12,610,556

The increase for the first half of the year 1852 is very large, being more than one half the amount received during the year 1851. The comparison may be made from the following table, presenting the receipts during the first six months of 1852:

	Receipts.	Quarts.
January	$3,340 95	668,190
February	3,463 05	692,610
March	4,389 95	877,990
April	4,995 75	999,150
May	7,119 95	1,423,990
June	8,701 50	1,740,300
Total	$32,011 15	6,402,230

It is, comparatively speaking, a very short time since the Hudson River Railroad was opened, yet the amount of milk now sent over it from the different stations, to a distance of about eighty miles from New York, is very considerable. The road, it will be remembered, has not been more than three years in operation, and the receipts for the first two years were small in comparison with the amount at present received. The first milk freight did not exceed four hundred quarts, and the receipts therefor amounted to about two dollars. Of the many stations along the route, the greatest quantity is sent from Sing Sing, Peekskill, Starksburg, and Stuyvesant. The other stations are Dearmans, Tarrytown, Croton, Crugers, Garrisons, Fishkill, Poughkeepsie, Rhinebeck, and East Camp. The annexed table gives the amount conveyed to the city by this road for the year commencing August, 1851, and ending July, 1852:

	Receipts.	Quarts.
August	$630,05	144,012
September	510 26	116,518
October	404 86	92,540
November	337 68	77,184
	$1,882 85	430,254

	Receipts.	Quarts.
Amount brought forward ..	$1,882 85	430,254
December	332 87	76,084
January	332 89	76,096
February	304 27	69,548
March	373 82	85,220
April	399 49	91,312
May	695 17	158,896
June	890 80	203,616
July	906 12	207,112
Total	$6,118 48	1,398,138

This, it must be admitted, is a large addition to the annual amount of milk consumed in the city. It tends to the partial decrease of the impure and adulterated milk, and we may look forward with hope to the time when, through the agency of steam, the whole traffic in it will be destroyed.

Chapter Two.

Increased Supply of Pure Country Milk—The Milk Freight of the New Haven Railroad—The New Jersey Country and Swill Milk—Daily Supply of Country Milk.

In the preceding chapter we gave the amount of milk brought over the Erie, Harlem, and Hudson River Railroads during one year. From those statistics, it will be seen that the supply received in the city during the three months of summer is more than double the quantity received in winter. For instance, the number of quarts transported over the Erie Railroad in July of 1851 amounted to 1,686,290, while during the month of January of the same year it did not exceed 652,180. This is attributable to the scarcity of the proper vegetable diet in the winter season, and to other causes, which will be explained hereafter.

In 1841, as estimated by Mr. Hartley, the daily supply was about 45,000 quarts, or 16,405,000 for

the twelve months; and of this but a very small proportion was pure. In fact, it was impossible then to procure it from the country, for the whole business was monopolized by the swill milkmen. The quantity of the pure article at present received from the country exceeds the aggregate of all kinds in 1841, when New York had a population of 312,000.

When it became generally known, however, that pure milk could be obtained at a little more than the price paid for the *manufactured* article, all that could be transported over the railroads met with immediate sale. But still, strange to say, there was no perceptible reduction in the quantity of the impure and adulterated kind, and the slop and swill establishments were as flourishing as ever till about five or six years ago, when the daily distribution was diminished by a few thousand quarts. This, though a trifling decrease, is still sufficient to prove that a larger supply of the pure country milk would diminish the sale of the unhealthy kind, to a great extent, if it should not wholly abolish it.

By the New Haven road, during the year 1851, there were 907,332 quarts sent to the city, the

transportation of which cost $4,336 69. This is small in comparison with the quantity received by the other roads, but it is only a few years since milk was first transported over it. The following table exhibits the monthly receipts during 1851:

	Receipts.	Quarts.
January	$217 04	43,408
February	222 38	44,476
March	277 07	55,412
April	317 69	63,536
May	426 19	85,236
June	500 40	100,008
July	574 12	114,824
August	552 61	110,524
September	362 40	72,480
October	315 37	63,072
November	291 94	58,388
December	279 48	55,896
Total	$4,336 69	907,332

The increase for the first six months of the present year (1852) is very large, as may be seen by the annexed table. The quantity received during that period was 621,220 quarts, or more than double the receipts for the first half year of 1851.

	Receipts.	Quarts.
January	$418 65	83,608
February	405 42	80,884
March	489 51	97,888
April	475 40	95,288
May	607 70	117,540
June	730 26	146,012
Total	$3,126 97	621,220

The report of the freight business of this road next year will, it is expected, show a still larger increase. The farmers whose lands lie sufficiently near any of the stations along the route, to enable them to transport their milk to New York, are only beginning to enter into the business with spirit. They perceive how profitable it may be made, and many who possessed only a dozen head of cattle a few years ago, are now rapidly increasing their stock to supply the constantly increasing demand for milk. The land is excellent, and peculiarly adapted for pasturage, and there is every reason to believe that in four or five years hence, it will become to New York what Westchester county is now.

The milk received from Jersey is very limited in comparison with the quantity procured from other quarters. The country does not afford such good pasturage as either Orange or Westchester county, and the farmers do not devote so much of their attention to the raising of cattle. But although Jersey can not in any sense be called a "land flowing with milk and honey," the city supplies New York with a considerable proportion of its swill milk.

Several thousand quarts of this stuff are brought to us by the boats weekly, although, strange to say, the people of that city are themselves supplied by New York milkmen, who, we understand, furnish them with the pure article. This is certainly returning good for evil, a Christian magnanimity for which it is hoped the Jerseyites will ever hold us in grateful remembrance. The pure country milk is chiefly obtained from New Brunswick and Elizabethtown, whence it is brought over the railroad to Jersey City and thence to New York. The cost of transportation from Elizabethtown is six cents for every forty quarts, and eight cents for the same quantity from New Brunswick.

The following is the report of the freight agent, of the amount of milk brought over the road from those places since the 1st of January, 1852:

	Receipts.	Quarts.
January	$84 96	42,680
February	120 96	61,760
March	119 68	60,800
April	133 76	67,720
May	177 84	91,320
June	154 08	78,560
July	153 92	79,360
Total	$945 20	482,000

In addition to this, there are about one thousand quarts brought to Jersey City every day by the Ramapo and Paterson Railroad, which, added to the foregoing, gives a total of 695,000 quarts transported over the two roads from the 1st of January, 1851, to the end of July. From Elizabethport, the steamboat Red Jacket brings to this city 1,500 quarts daily, and about fifteen hundred quarts are received from Newburgh by barges.

That our readers may perceive at a glance the quantity of pure milk transported to this city from the country by the railroads and boats, we give the following table, exhibiting the daily average for the year 1852, down to the end of June:

	Receipts.	Quarts.
By the Harlem road	$213 99	42,798
By the Erie road	175 89	35,177
By the Hudson River road	16 46	3,762
By the New Haven road	17 18	3,413
By the Jersey road	4 44	2,263
By the Ramapo and Paterson road	3 00	1,000
By steamboat Red Jacket	5 00	1,500
By barges from Newburgh	7 50	1,500
Total	$443 46	91,413

The apparent disproportion of the prices of freight by the various conveyances, is caused by

the difference in the distance from which it is brought. We find from this table that there are 91,413 quarts of pure milk received in this city daily, but it would be a great mistake to suppose that this milk is supplied as pure as it is furnished from the country. Those only who are initiated into the mysteries of the milk trade here can have any adequate idea of the frauds perpetrated upon the public. We are certain we do not overestimate the quantity, when we say that of the milk used by private families one-fourth is water, and a mixture of chalk, flour, molasses, and other ingredients. There are a few companies in New York which sell the milk as it comes from the cow, but the quantity is very small when compared with the adulterated kind.

A well-practiced eye can tell at a glance what proportion of water is added, and we have been informed by a person experienced in these matters, that he has seen milk one third of which consisted of water mixed with chalk, magnesia, or some other substances, which gave it an appearance of consistency. The adulteration of milk, however, is too important a matter to be discussed in a single

chapter. We merely mean to show here, that the quantity of country milk, both pure and adulterated, consumed daily, exceeds 100,000 quarts, for which about $6,000 is paid, by private families, hotels, confectionaries, restaurants, etc. It must not, however, be supposed that the practice of adulteration is confined to country milk, for a large proportion of the produce of the swill stables is subjected to the same process. The ninety thousand quarts sent in from the country, is increased to about one hundred and twenty thousand, with the aid of the ingredients already named.

Chapter Three.

Fraudulent Practices of Swill Milkmen—Description of a Swill Milk Establishment, and its Internal Economy—Disgusting Practices and Brutality of those Employed in them.

We have already stated that the swill milk daily consumed in this city, Williamsburgh, Brooklyn, and Jersey City equaled about two thirds the quantity of the pure country article, that is, near one hundred and eighty thousand quarts. This, however, it must be understood, is not produced in New York alone, for there are extensive cow stables in the neighboring cities, from which the city receives large supplies by steamboats. Every morning about three o'clock, the boats upon the different ferries are crowded with milk wagons coming from the "sister cities" to distribute the poison among our people. Some of these vehicles are labeled "Pure Country Milk," "Westchester County Milk," "Orange County Milk," etc., so that those

who receive it are under the impression that it is the pure article with which they are supplied. This system of deception, although frequently exposed through the press, is still in fatally successful operation. It is true, that some of the milkmen driving these wagons do supply their customers with excellent milk, but the number is very small when compared with those who do not. There was one man engaged in the business who put up a notice that he sold "only pure milk and *water*," and so implicit was the confidence placed in his word that his business was very extensive.

We have computed, as accurately as possible, the number of cows on this island which are fed upon grain, swill, and other slops, and find them amounting to about four thousand. Of these, more than one-half are kept in stables connected with distilleries, and the remainder are to be found in various sections of the city where stable rent is cheap. Some are as far as three and four miles beyond the city limits, and to these the swill is carried in barrels upon carts. The most extensive distillery in the city is that owned by a Mr. Johnson, at the foot of Sixteenth Street, on the North River. It pro-

duces more swill than any other in New York, and it is said, even more than any other in the United States. Whether this is correct or not, it is not necessary to inquire, but of one thing we are certain, that it is one of the greatest nuisances which has ever been tolerated by our authorities.

We do not refer to the manufacture of spirits, for with that we have nothing to do in this connection, we simply allude to the production of swill for the use of cattle, and the evils inflicted on the community thereby. Thousands of barrels of this horrible stuff are consumed weekly by the miserable-looking and diseased animals confined in the stables to which we have referred. This, of course, is a source of considerable revenue to the owner of the distillery, whose interest it is to support the sale of the swill milk, and to discountenance that of the pure article from the country. He makes thousands of dollars yearly by this branch of his business alone. The price paid for the board of each cow is six cents per day, or about twenty dollars a-year, and, estimating the number of cows kept in the Sixteenth Street stables at two thousand, the yearly income will be found to amount to forty thousand dollars. This is

an immense sum of money, and it would require more than ordinary strength of principle to resign a business so lucrative, from motives of public philanthropy.

The sale of swill, as we have stated, is not confined to the stable in the immediate vicinity of the distillery, but extends even to a distance of three or four miles from the city. Some of our readers, doubtless, have seen the vehicles in which it is carried—heavy lumbering carts, with one or two barrels, besmeared with swill and dirt, and emitting a most offensive odor. They are drawn each by one old, broken-down, spavined horse, and occasionally by a team of oxen. Crowds of these carts during "swill days" may be seen around the distilleries, waiting their turn, and so large is the quantity sold in this way that a whole day is often consumed in its distribution. The price per barrel is about a shilling, and many thousand barrels are disposed of weekly for the use of cows and pigs.

As the only object of the men who keep these cows is, to turn them to the most profitable account, the expense is curtailed in every possible way. They are allowed no straw for bedding, but a very

small quantity of dry feed, consisting of hay and grain, is given them, and the floor on which they are compelled to lie, is generally covered with ordure.

As comparatively little is known of the internal arrangements and general management of these establishments, we will give a description of the one to which we have referred as the largest in the city. This stable is situated at the foot of Sixteenth Street, between the Tenth Avenue and the North River. The buildings and ground are owned by Mr. Johnson, the proprietor of the distillery adjoining, from which the cattle are supplied with the swill or slop. There are, properly speaking, three stables running parallel with each other, from the avenue to the river. They were all originally constructed of wood, but it was thought prudent, in consequence of a fire which broke out in one of them about four years ago, and which destroyed a considerable amount of property, to rebuild some of them with brick. Their length is from five hundred to seven hundred feet, and each one is made to contain between six and seven hundred cows. Their appearance outside is any thing but inviting, and the stench can sometimes be perceived at a distance of

a mile; but the exterior, disgusting as it is, conveys no adequate conception of the interior.

The cows are ranged in consecutive rows, of fourteen or fifteen to a row, and are separated by wooden partitions which do not extend further than the animals' shoulders. At the head of each row is the trough which contains the swill, and to one of the boards which forms the frame-work immediately above this, the cows are secured by a rope fastened round their necks. The unfortunate animals are so placed as to be almost constantly over this trough, except when lying down; and even that position, instead of affording them rest, only subjects them to a new torture, for the ground-floor of these stables is saturated usually with animal filth. It is almost needless to state that stables kept in this condition can not be wholesome, and that the atmosphere which pervades them would, of itself, be sufficient to taint the milk, and render it unfit for use. The ceiling is from seven to eight feet high, and generally at one end of the stalls is a small room where the cans, and other utensils required in the business, are kept.

This room serves also the purposes of an office,

and although it is something cleaner than the adjoining stalls, it is not free from the stench. As ground rent in this locality is very high, the economy of space is a great desideratum. Thus the same building in which the cows are kept is also used as a stable for the horses employed on the milk routes. They are, however, more carefully tended, get better food, and their stables are kept cleaner. The cows are occasionally fed with hay and grain, but the latter is always mixed with the slops in their trough, and the former is most sparingly distributed. When the swill is first served it is often scalding hot, and a new cow requires some days before it can drink it in that condition. It instinctively shrinks from the trough when the disgusting liquid is poured in, but in the course of a week or two it becomes accustomed to it, and, finally, drinks it with an evident relish. The appearance of the animal after a few weeks' feeding upon this stuff is most disgusting; the mouth and nostrils are all besmeared, the eyes assume a leaden expression, indicative of that stupidity which is generally the consequence of intemperance. The swill is a strong stimulant, and its effect upon the constitution and health of the animal, is

something similar to alcoholic drinks upon the human system. Of this swill, each cow drinks about twenty-five or thirty gallons per day, so that the total consumption in the stables is about fifty or sixty thousand gallons. The quantity of milk given upon this food, varies from five to twenty-five quarts daily, that is, in every twenty-four hours.

The cows are milked twice, once at three o'clock in the morning, and once at two or three in the afternoon.

The operation of milking in these stables is as peculiar as it is disgusting. At the appointed time, the man who is specially engaged for this purpose enters the stable with a pail or can, and, raising the cow from the filth in which she has been lying, and with which she is covered, commences the milking process. About eight or ten minutes are generally required to milk a cow, but the time is of course always regulated by the quantity given. An expert hand at the work will milk a dozen cows in an hour and a half, and we are told of one man who performed the task in a still shorter time. There is no article of food which requires more cleanliness in its manipulation than milk. The vessels in which

it is contained require constant cleansing; but the men engaged in the swill milk business scorn all such nicety, for with them cleanliness appears to be an exploded idea. Their hands are seldom or never washed before milking, and indeed if they were they would soon be soiled by the cow's udder. In the process it occasionally happens that a lump of dirt falls into the liquid, when the hand of the milker most unceremoniously follows it and brings it out. The udders of some cows have been known to be afflicted with ulcers, yet even in that condition they were milked, and the milk mixed with the general stock for distribution. These details, disgusting as they are, fall far short of the reality.

The treatment to which the poor animals are subjected is so severe that they often sink under it. When they become diseased, as not unfrequently happens, they are milked up to within one or two days of their death; and when no longer able to stand, they are held up until the process is performed. A friend who was an eye-witness to a case of this kind, informed us that when every means had been tried to make the cow stand, and when kicks and blows proved ineffectual for the purpose,

two men sustained while the third milked her. When their support was removed, she fell to the ground, where she lay till death put a period to her suffering. The milk thus obtained must be infected with the disease of the animal, and, of course, is most deleterious to health. Its fatal effect upon children may be seen in the terrible mortality among the infant population of the city, who subsist almost exclusively upon milk.

Chapter Four.

Profit of the Swill Milk business—Great Mortality and Disease among Cows fed on Swill—The Drivers of Milk Carts, the Stable Keepers and the "Small Dealers"—Process of Adulteration.

The quantity of milk furnished daily by the cows in Johnson's stables is about twenty-four thousand quarts, but it is increased to thirty thousand by the addition of six thousand quarts of water. The profits accruing from this are very large. Estimating this milk at five cents per quart, the price at which it is sold, its total value will be found to amount to $1,500. This may exceed the real receipts by one or two hundred dollars, for it is impossible to arrive at an accurate estimate without an inspection of the account books. Allowing twelve quarts of milk as the daily average yield of each cow for nine months, we find that the receipts from the sale of the milk of a single animal amount to about $160 in that period. About $40 more is made by the water with which it is diluted, and

which is generally added in the proportion of one fourth.

This increases the amount to about $200, from which a large profit is obtained after the deduction of all the expenses. These expenses are comparatively trifling upon a milk dealer who has as many as eighty or a hundred cows, very few having less than twenty. The loss by the death of cattle is sometimes very heavy, as many as eight or ten dying in one week. On a recent visit to Johnson's stables the writer saw two lying dead outside of the stables, exposed to the view of the public, and not far from these were two others which had been turned out to die. One had fallen over on its side and was in the last agonies of death, and the other was making vain attempts to stand up. Such scenes are very frequent at this establishment, and may be witnessed almost daily. The stable-men are hardened by association with them, and regard them as the natural concomitants of their business. Of those that are diseased, more than one half are disposed of to butchers, who can purchase them in this condition at two or three cents a pound less than they pay for healthy meat. If they run dry before be-

coming diseased, they are fattened (bloated) with a kind of food termed ship-stuff, which consists of mill dust and the worst kind of grain, and sold to such butchers as will buy them.

A large amount of this kind of meat is used by the poorer classes, who never suspect the reason they obtain it cheaper than it is sold elsewhere. The law has made it a misdemeanor to sell diseased beef, and about a year ago several persons were arrested for its violation, but at present, although the practice is continued, we seldom hear of any arrests being made. It is not very difficult to detect this meat; it has a peculiarly bluish appearance, and becomes putrid in a much shorter time than good beef. It also takes more of it to weigh a pound, and when cooked there is less of it.

The cattle that are fed in Johnson's stables, and in fact in all that we have ever visited, are seldom or never allowed to leave them. They are constantly breathing the fetid atmosphere of their prisons, their teeth rot out of their jaws, their hoofs grow to an unnatural length, and turn up something similar to the point of a skate. These are the marks by which a slop-fed cow is generally known, and it

is impossible to mistake them. Sometimes the hair falls off, ulcers break out in various parts of the body, and the hoofs become so sore as to render the animal quite lame and unable to stand. It is melancholy to see some of the poor creatures, when they are so fortunate as to get out of their pens for an hour or two, attempting to walk.

After all the losses sustained by the swill milkmen are considered, it will be seen that their profits, as we have stated, are very large, and such as are able to keep one or two hundred cows acquire a fortune in a few years. We have conversed with some who were once engaged in the business, and who were very willing to admit, now that they had no further interest in it, that the milk was most unhealthy. The total daily receipts from the milk of one hundred cows, including the water mixed with it, is about seventy dollars, from which we must deduct thirty dollars for the expenses attending upon the business. Of this sum, about twenty dollars are paid for the rent and feeding of the cattle, for the proprietors have to buy their own grain and hay; the other ten dollars are required for the salaries of the hands employed in the stables,

and for incidental expenses. From this it will be seen that labor in this business is very poorly remunerated, and it is next to impossible for the driver of a milk cart to support a family by his earnings. The wages they receive never exceed twelve dollars a month, and are sometimes as low as eight, but the usual amount is ten. We should add, however, that they are, as a general thing, boarded by their employer, which makes their salary equivalent to five or six dollars a week. The work they have to perform for this pittance is very laborious; they are required to be in readiness at three and four o'clock in the morning, to serve the milk among their customers, who are generally distributed over every part of the city. Thus they have sometimes to go over a distance of ten miles in serving one route, which they accomplish generally in three or four hours. In the afternoon they set out about two o'clock, and generally commence serving their milk at the most distant part of the route.

The drivers have nothing to do with the care of the cattle, which belongs to an entirely different class of men. Their only business is to attend to the milk routes, and take charge of their horses

and wagons. One man will serve as much as one hundred and fifty quarts in a morning, but the average quantity is about one hundred.

The most unpleasant and laborious part of the work falls to the share of the stable-keeper, whose business it is to feed the cows and take charge of the stables. This is an arduous task, indeed, and would tax the utmost powers of Hercules himself. If the cows kept in the Augean stables were fed on swill, the son of Jove, we suspect, would have had more difficulty in the accomplishment of one of his great labors. The stables of Johnson may well be considered their rivals, but we are not so fortunate as the ancients in possessing a Hercules to rid us of the nuisance.

From early morning till a late hour in the evening, the stable-man of Johnson is engaged at his never-ending task. The horrible and poisonous atmosphere that he is constantly inhaling, and the disgusting drudgery that he has to perform, render him truly an object of commiseration. His labor is also poorly requited, his weekly salary not exceeding eight dollars. There are very few who can obtain any other employment which will pay them

even one or two dollars a week less, that will remain at this kind of work. They never have any rest from year's end to year's end, for "Sunday shines no Sabbath day to them," and customers must be attended to on that day as punctually as on any other day of the week.

A considerable quantity of the milk manufactured in these stables has to undergo another process before it is distributed. There are a large class engaged in the business, called the "small dealers," who purchase from fifty to two hundred quarts daily, from the owners of the cows. Some of these men own wagons, and some retail their milk in the stores. These stores are curiosities in their way, and demand a brief notice.

A great many can be seen at any time in the neighborhood of Johnson's stables. Some of them exhibit a sign, which informs the gullible public that the best pure country milk, from Orange county or Westchester, or Orange *and* Westchester, whichever you please, is sold inside. The business of the establishment is also indicated by a plaster of Paris cow, which is displayed in the window, with one or more geraniums—but what these plants

have to do with dairies or cows we have never been able to discover. Upon entering, you will see three or four large cans, which contain the *pure country milk*, and which is sold for four cents a quart in the summer, and five cents in the winter. Now this stuff, as it comes from the swill stables, is bad enough, but in this laboratory it undergoes a transformation which renders it still worse.

"I would as soon," said a person speaking to us about the adulteration of milk, "think of giving poison to my family. It is not fit for swine."

We agreed with him, and so will our readers, when they hear the tale that was told to us. To every quart of milk about a pint of water is added, and then a due allowance of chalk, or plaster of Paris, which takes away the bluish appearance given to it by the water. Magnesia generally forms a component part, and flour, starch, and occasionally an egg, is mixed up with it to give it consistence. After all these ingredients are employed a certain quantity of molasses is added, to produce that rich yellow color which good milk generally possesses.

Several thousand quarts of this kind of milk are

sold daily throughout the city, in utter disregard of all law. It is, however, a most difficult matter to detect the manufacturers in the act of making it, for only the initiated are allowed to be present when the mysterious work is going on. But there is no difficulty in detecting the quality of the milk itself. By allowing it to lie over until it is decomposed, the chalk, magnesia, molasses, and all can be discovered. If any eggs have been used in its manufacture, a yellowish slime will be found floating upon the top; but it is very seldom that a milkman is found guilty of this extravagance. The liquid is all water, of a bluish white appearance, and in the solid mass which lies at the bottom the chalk and magnesia may be easily perceived.

Chapter Five.

Cow Stables of London—The City Inspector and the Swill Nuisance—Diary of a Cow Stable—The Fortieth Street Establishment.

It is impossible to state accurately to what extent the adulteration of milk is carried on in this city, but there is every reason to apprehend that the practice is very prevalent among a large proportion of the small milk dealers. By the aid of the "cow with the iron tail," two quarts can be increased to three, and the profits nearly doubled, after deducting the price of chalk, magnesia, and other compounds. Fortunes have been made and still continue to be made at the business. Out of every hundred who sell milk there are, perhaps, very few who do not dilute it with water, while about one half adulterate it with the ingredients we have named. We should state, however, that the practice is not confined exclusively to our milkmen,

but is common in all large cities in this country and in Europe. London has become notorious for it, and, in proportion to its extent, is supplied with more adulterated and swill milk than New York. Immense subterranean stables are to be found there, containing thousands of cows, fed almost entirely upon swill slops, and decayed vegetable matter, gathered in the large markets and streets of that city. From the time they enter these stables till they leave them, they never see the light of day. They are dimly lighted with gas, and there is little or no ventilation, so that the mortality among the cattle is much greater than in any of our establishments. The injurious effect of this milk upon the health of the community was conclusively shown by a Mr. Ruggs, and several eminent physicians of that city, and we understand that a considerable reform was accomplished by their instrumentality. We have no doubt that the physicians of New York could render most effective service toward the suppression of the traffic here, if they would co-operate for that purpose. The public only require to be fully informed of the evils resulting from the use of the impure milk, to discountenance

the sale of it. Who would believe, if not informed of the fact, that two thirds of the milk consumed in the city is the produce of these stables, and that of the twelve or thirteen thousand cows fed on swill, over two thousand die annually from diseases produced by their peculiar diet and cruel treatment? There is no nuisance with which we are afflicted that is more injurious, and there is none which is tolerated with more coolness. The authorities of the city are perfectly aware of its existence, and should adopt the most effective means for its speedy removal.

The City Inspector has been frequently informed by his Wardens of dead cattle which have been found lying outside of the stables in Sixteenth and Fortieth streets, and while he has given orders for their removal, the real nuisance itself has been passed over with singular forgetfulness. Hundreds of children die annually of diseases which physicians say are caused by swill milk, yet in his last yearly report, the City Inspector, speaking of the various causes of mortality among them, never once alludes to the most prominent. The very atmosphere around them is detrimental to health, and

most offensive to those living in their vicinity. A gentleman, who lived within a stone's throw of the Sixteenth Street stables, says that they were a source of perpetual annoyance to him, and that he was finally forced to leave the immediate neighborhood on account of them. So offensive was the odor that it sometimes produced nausea, and the inmates were often awakened at night by it. The following extracts from the diary of the gentleman referred to, will give some idea of the character of this nuisance:

"The cow stables were horrible to-day—the odor penetrated the house, and became diffused through all the rooms, although the windows and doors were closely shut."

"The stables on hand again to-day, with a slight intermission."

"Wind northerly, and stables both odorous and odious."

"The stables give indications of a change of wind, from north-east to north."

"An occasional puff to-day from the great perfumery."

"The old nuisance insufferably bad for several hours this evening, especially at tea-time, when the odor was most impartially diffused through every part of the house, in spite of closed doors and windows."

"Moved out of the neighborhood, and finally got rid of the nuisance. My family physician advised me to leave the place on account of it."

We might fill a dozen pages with extracts like the foregoing, but these will suffice. It would be unfair, however, to give our readers the impression that these stables are the only nuisance of the kind in New York, for there is another in Fortieth Street, which may justly be considered their rival. It does not contain more than one hundred cows; but these are kept in a worse condition than the animals in Johnson's stables. The building is constructed of wood, and is immediately contiguous to the distillery, from which the swill is obtained through iron and wooden conduits. The average weekly quantity of milk and water supplied by this establishment is about ten thousand quarts. The stable is surrounded with manure, which in some places is knee-deep, and the smell arising from this, combined with the swill, is sickening. It is, however, so far removed up-town that it has hitherto attracted little attention, but the poor people living in the vicinity are constantly complaining of the insufferable smell that proceeds from it. The cows present the same appearance that we have observed in those kept in the concern in Sixteenth Street, and the disease and mortality among them is as great

in proportion to their number. It is easy to distinguish those that have been long in the stables from the new-comers. The latter have generally a fresh and healthy look, while the former are wretched, emaciated, dejected, spiritless-looking creatures. Some of them are so thin that the bones appear as if ready to protrude through the skin. This is generally the case with such as die of consumption, a disease quite prevalent among cattle fed on grain and swill. When attacked with consumption, they decline very rapidly, and some die after a confinement of three or four months. These animals it is impossible to fatten, and they are therefore milked as long as they will yield a quart. It matters not what the quality of the liquid may be, the milkman can not afford to lose any of his profits, and it is consequently sold with the rest of the milk.

The economy with which the business of these establishments is conducted, is one of their most remarkable features. Not more than one half the hands necessary for the management of the business is employed. One stable-man is made to do the work of two; the horses engaged on the milk routes

are generally emaciated and broken-down hacks, which have become useless for any other purpose, and as we have already stated, the cows are so closely packed together that they have not sufficient room to stretch themselves without partly lying on each other. The milk cans, which contain from ten to fifteen gallons, are never thoroughly clean, for scouring is a thing almost entirely unknown to swill milkmen.

How different from the scrupulous cleanliness and neatness with which every thing in and about the country dairies is managed. The cans, and all the vessels in which the milk is kept, are scalded and scoured daily, and the dairy itself is generally situated on the coolest part of the farm. One of the peculiar characteristics of swill milk is, that it is next to impossible to make butter or cheese from it, which is perhaps the strongest evidence that could be produced to prove its deficiency in the nutritious properties possessed by the pure article.

Chapter Six.

The Swill Milk Business in Williamsburg, Wallabout, and Brooklyn—Milk Transported from those Places to New York—The Milk Carrier—Manufacture of Buttermilk—The Jersey City Milk Business.

Those who are in the habit of crossing the Grand Street ferry at Williamsburgh, must have perceived at times, when the wind was from a certain quarter, a most unpleasant odor. This proceeds from some large cow stables situated on First Street, from which they extend several hundred feet, to the very margin of the river. On the opposite side is the extensive distillery of Crane, Coggswell & Co., to which they are a most profitable adjunct. These stables are capable of containing five hundred cows, but are made to hold fifteen or sixteen hundred. They are conducted on the same rigid principles of economy, and with the same heartlessness that we have noticed in establishments of the kind in this city. There are four buildings altogether,

all of which are constructed of brick, and on the outside are a number of tanks in which the slop is received from the distillery, and from which it is distributed into the troughs for the use of the cattle.

At the extreme end, near the river, are large manure heaps, which are a source of considerable profit to the proprieters, and of great annoyance to the residents in its vicinity. In these stables from fifteen to twenty cows die every week, from diseases incident to their diet and peculiar treatment. These are disposed of at about three dollars a head, to a certain class of men, who skin them, and convert their fat and bones to some useful purpose. The fat obtained from them is of a very inferior quality, and is very limited in quantity. Their skin is the most valuable part, and it is principally for it that the bodies are bought.

These stables are rented to the owners of the cows, of whom there are from twenty to thirty, and they are supplied with swill upon terms somewhat similar to those who rent stalls in Johnson's stables. The weekly quantity of milk obtained from the cows kept here is one hundred and thirty thousand quarts. These stables do not consume more than

one half the swill manufactured in the distillery, which supplies about twenty smaller establishments in different parts of the city, Bushwick, and other places in the vicinity. Williamsburg abounds with small milk dealers, many of whom pursue the same system of adulteration that prevails among that class in this city. The mortality among the cattle fed in stables, in each of which from fifty to one hundred cows are kept, is not so great as in those adjoining the distilleries, and their milk is generally of a superior quality. The reason of this is, that they receive less swill and more solid diet, the swill being used mainly as a stimulant. They are not so closely packed together, and if the owner possesses any vacant lots, they are frequently allowed to enjoy any herbage which may offer. Still the milk obtained from such cows is injurious in proportion to the quantity of swill consumed by them.

The stables to which we have referred enjoy a most extensive patronage, both in Williamsburgh and this city, where they have competed for a long time most successfully with the pure country milk. Williamsburgh is, in fact, their great stronghold, and although a village in comparison to New

York, it produces a much larger quantity. We have been informed by some of the men at present engaged in the business, that there can not be less than four thousand cows in the city proper, and about two thousand in its suburbs, making a total of six thousand, which yield near seventy-two thousand quarts daily. Within the past two or three years, several pure country milk dairies have been established there with considerable success, but still we think the supply does not keep pace with the rapid increase of the population.

Wallabout, which lies to the south of Williamsburgh, and which may be considered part of its environs, has another swill manufactory, though of less extensive dimensions than that just noticed. The distillery is owned by Towers & Co., and the ground by a Mr. Scores. The appearance of this establishment at a distance is very picturesque, but, like many other things in this world, it loses its charms on a closer inspection. In front of it is an old house, constructed, doubtless, some hundred years ago. It is built in style somewhat similar to the few old Dutch buildings which are still to be found about New York. The distillery and stables

are approached by a short path leading from the main road. In the latter, which are in a most ruinous condition, between three and four hundred cows are confined.

The number of cows in Brooklyn is estimated at two thousand, of which about one thousand or more are kept in the stables attached to the distilleries of Woods, Underhill & Wilson, in Skillman Street. But a very small proportion of the milk of these cows is sent to New York, the supply being scarcely sufficient for home consumption. About three thousand quarts of country milk is transported over the Jamaica and Long Island Railroad daily, and this, with four thousand quarts obtained from Orange county and other sources, is the only pure milk received in Brooklyn.

About five thousand quarts of the Brooklyn swill milk is sent to this city daily by the ferry-boats. A portion of this is distributed on routes to regular customers, and the remainder to the small dealers. These dealers generally make from a cent to two cents a quart, according to the extent to which they adulterate their milk. Their customers purchase it in the stores, while others receive it from

the carriers at their doors. The carrier must not be confounded with the driver, from whom he differs in many respects. He is a much older institution, and is of course entitled to a brief consideration.

About thirty or forty years ago, when Canal Street was regarded as the highest limits of the upper part of the city, the principal part of the milk business was transacted by carriers, so that drivers may be considered a modern improvement. They always carried two cans, suspended by ropes from a yoke, which was made to fit the shoulders. These yokes are still extensively used in certain sections of New York, and are common in the country, where there are very few farms without one or more of them. The carriers are to be found principally on the east side of the city, and commonly in the poorest localities, where as many as eight and ten families reside in one house. The milk they furnish is generally of the worst description, and is sold at four and five cents a quart. There are hundreds of men, we have been informed, who earn a subsistence at this employment, and some of the most extensive milk establishments in New York were commenced in this way. We know of a large one in the Eighth

Avenue, near Seventeenth Street, whose owner informed us, that his first beginning was in a similar way, and that his sales were limited to thirty quarts daily. That was about five or six years ago, but so rapidly has his business increased, that he now employs five carts, and sells ten thousand five hundred quarts every week. He, however, is only one of a large class, who commenced in the trade with means as limited. His milk, however, is sent pure from Westchester county, by the Harlem Railroad, and he says that in the large number of families which he supplies, not a single death has occurred among the children.

During the summer, the supply of milk from the country reaches its maximum, as may be seen by reference to the tables published in the first and second chapters, showing the quantity transported over the Erie, Harlem, and other railroads. It occasionally happens that four or five thousand quarts, and sometimes a larger quantity, remain unsold for two or three days, when it becomes so sour that it can not be disposed of as new milk. It is then churned, and sold in the form of buttermilk, for which there is generally a great demand in the warm weather.

The profits from its sale are about equal to those arising from the sale of new milk. In winter, on account of the decreased supply, there is no surplus, and consequently no buttermilk is made; for this branch of the business is so fluctuating, that, as a general thing, very few milkmen like to devote their time and capital to it.*

* About twenty years ago there was an old colored man, who made a pretty comfortable living in this city by the sale of buttermilk. His name has not descended to us, but he was universally known as "the buttermilk man." His stock in trade consisted of a hand-cart, and the barrel containing the milk. He was one of the most popular characters of his day, and was as well known as the "lime-kiln man," and other strange notabilities of the present time. When going his rounds his cry of "but-ter-mil-lik" was the only notification he gave his customers of his presence, and it never failed to draw them out of doors. On one occasion, the chronicle says, he got so far a-head of his times as to use a bell, but finding that his patrons would not recognize the signal, he was compelled to relapse into the old style, which, after all, he found to be more suited to him. Cotemporary with this character was the "salt man," another popular individual. He was a degree above the other, however, for he could afford the services of a horse. His cry was "*fresh* salt, and if you don't find it fresh you can have it for nothing." It is almost needless to state he never lost any thing by this magnanimity.

The milk trade in Jersey is very extensive, but with the exception of about a thousand quarts of the pure country article, the supply is furnished by swill stables, of which there are a large number in that city. The slop-fed cows kept in and about Jersey, exceed one thousand, and yet strange to say, there is no distillery on that side of the river. A considerable supply of grain is obtained from a brewery in Grove Street, and on this and the swill procured from New York, the cattle are fed. The swill is generally brought over the Hoboken ferry to Bergen, and thence conveyed to the various stables in Jersey. A small quantity is transported over the city ferry, but the milkmen are so much afraid of detection that they prefer having it brought by the Hoboken boats. They are obliged to be more vigilant and wary, for in so small a city their iniquities are more liable to be discovered and exposed. The same system of deception that we have noticed in New York also prevails there. False signs are painted on the carts, such as "dry feed milk," "grass feed milk," and occasionally you will see "Orange county milk," inscribed upon them in conspicuous letters. Of the Orange county

milk it is only very recently that any was sold in Jersey, and at present the quantity does not exceed four or five hundred quarts, the greater part of which is supplied by the Orange county milk association, on the corner of Jay and Washington streets, in New York.

Besides the distilleries which we have named, there are some others to which there are no cow stables attached, but which nevertheless sell swill for the use of cattle. There are also a considerable number of breweries and other establishments from which an abundant supply of grain is procured. Like swill, grain is also destitute of many nutritious properties, and is therefore regarded as very little better. Cattle fed upon it are generally healthier and in finer condition, but the milk has a bitter taste, and is considered unhealthy, particularly for children.

Chapter Seven.

The Milk and Dairies of Orange County—The Quality of Milk Affected by the Diet of Cattle—Bovine Instinct and Antipathies—Process of Cooling Milk.

The butter and milk of Orange county have long and justly been celebrated as the best in the State of New York, although of late years, Westchester has been considered its rival in the production of these essential elements of food. Of the pure milk consumed in the city, a little more than one third is received from the former county; and such is its great abundance, that if the facilities of railroad transportation were increased, it could supply us with all we should require during both summer and winter. The most distant milk depot is Otisville, about eighty miles from Jersey City, whence the article is conveyed by railroad and boats to New York. There are a large number of depots along the road from this station, to which the cans are brought

every morning and evening about one half the year, and once a day during the other six months.

The dairymen and dealers do not generally live farther than three or four miles from either side of the road, and their number is about three hundred. This, however, is a very small proportion of the dairymen in the county, whose distance from the road excludes them from any participation in the benefits of the trade, and who are consequently compelled to convert their milk into butter, which is its least profitable form. From eight to ten quarts of milk, it is said by those acquainted with the business, will make a pound of butter; but where it is particularly rich in cream, seven quarts have been found sufficient. The price paid to the farmers by the city milk dealers is eight cents a gallon, the latter having to pay the freight, which is two cents. Of such importance has the milk trade now become, that special trains have been employed in transporting the milk from the various stations. Should the Erie Railroad Company run one or two branch roads, as it is said they contemplate doing, as far as fifty or sixty miles in a direct line from the present track, the

supply of milk now received might be quadrupled.

The dairymen look to the ultimate consummation of this work with great interest and not a little anxiety, for it would increase their profits considerably. The manufacture of butter requires a large expenditure of time and labor, and is attended with occasional loss, which renders it any thing but a remunerative occupation to dairymen, when compared with the production of milk. They will, therefore, welcome the increase of railroads, as one of the most effectual means of relieving them from an unpleasant, because compulsory and comparatively unprofitable employment. We do not mean to say that any kind of farming would be more profitable, for doubtless it is much more lucrative than the raising of crops, but the manufacture of butter is so much less profitable than the sale of milk, that they would gladly embrace the first favorable opportunity of abandoning it. The raising of cattle, and the production of milk and butter, are the principal occupations of the land proprietors of Orange county; the word "farmer," therefore, strictly speaking, can not be applied to them, for

their land, with the exception of a very small tract on each farm for the cultivation of kitchen vegetables, is laid out in pasturage.

And for this it is peculiarly adapted, both lowlands and uplands affording a plentiful supply of grass, except in the winter season, when the cattle are fed upon hay and various kinds of dry feed. Considerable experience is requisite in the use of fodder, as it affects the quality of the milk. A few onions, eaten by a cow, will so injure it as to render it unfit for use, and we were told of a case in which the yield of a large number of cows was totally lost from their having eaten of this vegetable. Turnips will also injuriously affect it, imparting a strong and unpleasant flavor. To counteract the effects of such food, where it has been used, various drugs are employed in making the butter. Where it is not well preserved, through the carelessness of those engaged in making it, or from other causes, it very soon becomes tainted.

A good judge of milk can tell from its taste, not only upon what kind of vegetable the cow from which it was obtained has been fed, but even the particular kind of grass. Such nice distinctions,

however, can only be made by very keen observers, and by those who have made it their particular study.

The thick growth of grass found in the lowlands makes the richest kind of milk, while the milk yielded by cattle fed on rising ground is thin and contains less cream. The lowlands are therefore more valuable for pasturage, and generally command a higher price in the market. It must not, however, be very marshy, for such land is as unfavorable for the grazing of cattle as it is for the general purposes of farming. It has been noticed that after a shower, when the grass is moist, and is eaten in that state, the yield of milk is most abundant, while, on the contrary, when the weather is particularly dry there is a very perceptible decrease in the quantity.

In May and June the supply is greater than in any other month, but after that it diminishes till December or January, when it reaches its *minimum*. The great difference in this respect produced by the change of season is very remarkable. The same cow which in summer would give twenty quarts, in winter will not yield more than ten or

twelve. This is owing to the change of food, and the difference in the temperature of the atmosphere. In fact, so far do the variations of temperature affect the quantity of milk, that the regular yield is often reduced two or three quarts by it. Those having charge of cattle, knowing these facts, are very cautious in their treatment of them, and when there are indications of a storm, always drive them under cover. Although a shower of rain produces an increase of milk when the grass is eaten immediately after, yet it will not do to leave the cattle under it, for exposure to it causes their udders to shrink, and a decrease in the supply instantly follows. A cow may be very easily "dried up" by exposing her to the inclemency of the weather, or by milking her at irregular intervals, and then by drawing from her only a portion of the natural yield. When such a course of treatment is pursued, the teats usually dry up one after another, but it very seldom happens that they all dry up simultaneously.

There is, perhaps, nothing more interesting about a farm than the milking of cattle in the early dawn, or when the shades of evening are closing over the landscape. The animals know the time well, and

go to the yard to be relieved of their burden with the utmost good grace imaginable. So different are they in appearance from the cattle fed in the swill stables that they look as if they belonged to a different species. There is a look of contentment and repose in their eyes different from the stupid drunken stare of the miserable creatures confined in the cow-pens of this city and Williamsburgh.

We have seen them stand in the farm-yard, apparently most grateful to the milker, and desirous to aid him in the performance of his task, so far as their limited knowledge and means permit. We have observed them when they have seen the milker approach with pail in hand, put themselves in the best attitude to facilitate the operation, removing one of their legs out of the way, and standing as immovable as a rock until they are allowed to go at liberty. At such times they are invariably gentle and easily managed, but should they be alarmed by the appearance of any thing very unusual, it requires all the exertions of the keepers to pacify them. While grazing in the field, they will not allow you to approach them unless you and they have been previously acquainted, but in the

milking-yard they will tolerate even the familiarity of strangers.

In a recent visit to some of the best grazing districts in Orange county, we saw several fine specimens of milch cows, handsome-looking animals, which it is a pleasure to look at. Those who have only seen city-fed cattle, can have but a very faint idea of the beauty of real genuine country cows, for they are really *beautiful* creatures, and possess a sprightly and intelligent look, no matter what may be said to the contrary. They are also very sensitive, and susceptible of impressions to a nice degree. Present a pail of swill to one of them, and she will turn from it with unmistakable disgust, for it is only when every instinct of the animal is blunted, and her taste has become depraved, that she will drink such poisonous stuff.

Should they see any blood on the ground, which had been spilled there by accident or otherwise, they become perfectly frantic and uncontrollable. It is the same whether it has been observed by one or all; the first that sees it gives a peculiar signal, which is known by the others, when they run here and there and everywhere, terribly infuriated,

dashing and butting at every thing that may chance to impede their progress, and even leaping over fences four and five feet high. A scene of this kind occurred once on one of the most extensive dairies near Goshen. The owner had during the day killed one of his cattle in the milking-yard, and in the evening, when the herd returned to be milked, they perceived the blood. At first they went up to it with distended nostrils and glaring eyes, and sniffed at it; then they tossed up their heads, and, bellowing furiously, rushed round the yard, finally bursting over the enclosures into the fields, where they gave full vent to their madness.

It is said that it is only in cases where the blood has been shed by violence that cattle become so frantic at the sight of it; but, whatever credit we may give them for sagacity, they certainly do not possess any such supernatural powers of perception as this would indicate.

Their inhospitality to strange cows is one of the least prepossessing traits in their character. When one is introduced to the herd they generally present a hostile front, and should she resent this unfriendly reception, they attack her with ferocity, and force

her to seek safety in flight. After the first day, however, they receive her into the community as one of its members, and entitled to the full range of the pasturage.

A great difference of opinion exists among dairymen as to which of all the various breeds of cattle furnish the best milch cows. One will tell you that the Durhams are the greatest milkers, another that the Holland cows are superior, but as this is a matter which does not possess any interest for the general reader, we will merely remark, that in nearly every inquiry we made, we invariably found the Durham to be the best. When a cow's udder becomes so much distended as to pain the animal, she will present herself to be milked, and will not go away until relieved.

Before the milk is sent to the railroad depot it has to undergo a cooling process. In the warm weather this is indispensably necessary, as it makes it keep longer. The cans containing the milk are placed in large reservoirs of cold spring water for half an hour or more, and are then placed upon the cars to be transported to New York. This is a very important matter in the proper management

of a dairy, and the owners bestow a great deal of attention upon it. The dairymen must furnish their own cans, the wear and tear of which somewhat diminishes their profits. To prevent confusion, each has the name of its owner engraved upon it, so that it very seldom happens any are lost. The whole business is conducted with a punctuality and dispatch highly commendable, and when the supply of milk fails to arrive at its destination, it is generally owing to some accident or delay upon the road, and seldom to neglect on the part of the dairymen.

Chapter Eight.

Profits of Country Dairymen—Great Increase in the Supply of Milk by the Erie Railroad—The Stabling and Food of Cattle—A Word of Advice to Dairymen.

Of the two hundred farmers or dairymen who live along the line of the Erie Railroad, and who transport their milk to this city, but very few possess more than one hundred cows each, and a large proportion do not own more than twenty or thirty. The receipts obtained from the sale of milk, and the raising of cattle, form their only revenue—for their land is almost entirely used for pasturage. Farming is more troublesome, and less profitable, than the production of milk; and it is, besides, attended with more risk. It is only, therefore, when the facility for its transportation or its manufacture into butter are wanting, that we find the land-owners devoting their attention to agriculture. Good grazing land can not be had now for less than from seventy to eighty dollars an acre, and in localities where it is particularly fertile, it will bring

as much as ninety dollars. A farm of one or two hundred acres of such land, capable of supporting from one hundred to one hundred and fifty cows, will realize to its proprietor about three thousand dollars in a year, clear of all expenses; and this amount is made up by the profits arising from the sale of milk alone.

Every year the stock is generally increased by an addition of one calf to every cow, so that every three years, which may be regarded as the length of a bovine generation, the capital is doubled. It is very seldom, however, that dairymen keep more than one fifth of the calves to increase their stock, except where the breed is very valuable. They generally feed them for two or three weeks, at the end of which time they are disposed of for two, three, and four dollars per head.

For one or two days after calving, the milk of a cow is not fit to be sent to market, although it is not injurious to health. On the contrary, it is considered by some to be very nutritive, and when prepared for use by boiling, is pleasant to the taste. The first or second yield, we understand, however, is seldom or never used. It is always

thicker than the milk sold in the city, and is of a rich yellow color, resembling cream.

It is not more than ten years since the Erie Railroad was opened through Orange county, and at that time nearly all the milk was converted into butter, and in that form found its way to the New York market. In 1842, the first year after it was opened, 388,505 quarts were transported over it to this city, but the following twelve months, the quantity was increased to 3,181,505 quarts; and so profitable did the farmers find the business, that those who lived sufficiently near the road to benefit by the facilities it offered, abandoned the manufacture of butter, and engaged solely in the milk trade and the raising of cattle. The large number who abandoned the former occupation, caused, at the time, a considerable diminution in the amount of butter, and a consequent increase in the price. The first year, on account of the inconsiderable quantity sent over the road, but one train was run for milk, and that was the passenger or evening train. While this arrangement continued, the farmers did not wholly abandon the manufacture of butter. They churned the morning's "mess,"

and sent the evening's to the railroad station, for transportation to New York. In 1843, the company commenced running two trains, one in the morning and the other in the evening, thus enabling the farmers to devote their whole atttention to the one business. At this time great alarm prevailed among the swill milkmen in the city, who had reasonable fears that the introduction of the pure country article would diminish their profits. They endeavored to prejudice their customers against it by false reports; but, despite their opposition, the sale rapidly increased, and the third year 5,095,762 quarts were received over the road from Goshen and other stations. Before the opening of the Erie and Harlem railroads, swill milk was the only kind used by our people, except a few thousand quarts of pure milk supplied by farmers living near the city; and those who wanted it were glad to purchase it for six, eight, and even ten cents a quart, for which they always obtained it as it came from the cow.

Of the 12,610,556 quarts sent over the Erie road last year, a large quantity came by the Newburgh branch. A considerable supply, however, is still received by boats from Newburgh, as stated in a

previous chapter, although the fare, we believe, by either mode of conveyance, is the same.

The stabling of cows, during the winter season, is a matter of great concern to the country dairymen. They are attended to with the most assiduous care, their stables kept scruplously clean, and a profusion of straw strewed on the ground-floor for their bedding. As the yield of milk in winter is nearly one half less than during the summer season, the supply for city consumption is insufficient. To increase the quantity, artificial means have been resorted to, and it is a matter of regret that some dairymen near Newburgh feed their cattle partially on grain obtained from some breweries or distilleries in that city. This is a most pernicious practice, and if persevered in, will inevitably prejudice our people against country milk. As a matter of principle as well as interest, therefore, the other farmers should discountenance the practice, and do all in their power to abolish it. Grain is cheaper than any other kind of food which can be procured during the winter, but it is most injurious in its effects upon the quality of the milk, and no consideration should induce the farmer to use it. If the profits

are not sufficient to repay him for his time and trouble, there are very few who would not be willing to pay a cent per quart more for the milk, to procure it pure and unadulterated.

Hay is the general food of cattle during the winter, but some farmers feed their cows on ground meal, corn, oats, and buckwheat. These are sometimes ground together and given to the cattle in a dry state, but it is considered by some that the yield of milk is always increased by scalding this kind of feed.

An intelligent farmer, with whom we are acquainted, and who has a large experience in the treatment of cattle, says that a great improvement would be effected by steaming the hay and other fodder. This would in a measure, he thinks, bring back the hay to its original condition, and increase the quantity without injuring the quality of the milk. If this should prove successful, there is no reason why we should not have as large a supply in winter as in summer. The swill milkmen manufacture about the same quantity the whole year round, and in the former season, when there is a decrease of one half in the supply from the country, they do not, of course, meet with the same competition

in the sale of their milk. Let the farmers throughout Orange, Westchester, and other counties through which the Erie, Harlem, and Hudson River railroads run, establish associations throughout this city for the sale of the pure country milk, and the swill milk dairies will rapidly disappear. There are three or four associations in New York already, and their business is in a most flourishing condition. They can sell all they get from the country, for their custom is only limited by the quantity of milk which they are able to furnish. The farmers should not intrust the sale of their milk to small dealers, without first making an agreement that they shall sell it pure, for it too frequently happens that they so weaken it with water, or adulterate it with drugs, that hardly in one case out of ten do they give it to their customers as they obtain it themselves. Where the farmers can not establish associations they would find it more profitable to have it sold by agents in the city on commission. They now obtain but two cents per quart in summer, and three in winter, the purchaser paying a half cent for transportation; but by paying one cent commission their profits might be increased about twenty per cent.

Chapter Nine.

Estimate of Capital Invested in the Milk Business—Yearly Receipts from the Sale of all kinds of Milk.

There are very few departments of industry in this city whose capital is larger than that invested in the milk business. The number of farmers engaged in it is about 500, as stated in a previous chapter, and the number of cows possessed by these may be estimated at a little more than 10,000. Calculating the value of every animal at twenty-five dollars, and allowing three acres of grazing land to each, we have a total of $250,000 and 30,000 acres of land. To these must be added the cost of the cans used for the transportation of the milk, and the value of horses, carts, etc., employed in its distribution throughout the city.

From persons who have been engaged in the trade for many years, we learn that the number of horses

employed on the various routes throughout the city is 450. Some of these are valuable animals, worth from $150 to $200, the average value of each, however, may be set down at $100. This gives the total value of horses alone at $45,000, which may be regarded as a moderate estimate. The work which these animals have to perform is not of a very laborious nature.

Each horse has to go over a distance of about ten miles a day in serving the routes, so that the actual distance traveled by the whole number owned by those who sell pure country milk only, may be stated at 4,500 miles, which is about thrice the length of the passage from this port to New Orleans. Of the milk wagons there are 375, each of which, including the harness, is worth $100. This may be considered the average value of each vehicle, but there are many worth twenty and thirty dollars more, the difference being caused by the size and quality. The disproportion between the number of horses and wagons is accounted for by the fact, that two horses are required to draw the large wagons. The cost of the cans, of which there are about ten thousand altogether owned by the

dairymen in the country and the milk dealers in the city, is estimated at $30,000, or three dollars for each can. The loss caused by the wear of these is very considerable, making a reduction of about five per cent. per annum on the profits obtained from the sale of the milk.

There are at present 250 companies and single dealers receiving milk from the country, some of which sell over 6,000 quarts daily, and others not more than two or three hundred. A large number of the restaurants, hotels, and boarding-houses, are supplied by these associations, but a considerable proportion make their contracts with farmers, and procure it direct from the country. In this way they obtain their milk for three and four cents a quart, both summer and winter, which is about twenty per cent. less than they could purchase it from the milk dealers in the city.

The amount paid for pure country milk in New York in 1851, was a little over $1,800,000, of which about one fourth was paid for the water with which the article was diluted. The number of quarts (including, of course, the water, of which the milk dealers, as we have intimated, always give a most

liberal supply), consumed during the same period, was about 36,000,000. The aggregate amount paid for the transportation of this quantity, over the railroads, or by boats, was about $145,000.

These details relate only to the sale of what is called pure country milk, which forms about one third the quantity consumed, the other two thirds being the produce of the swill and grain stables in New York and the adjoining cities, to which allusion has been made. The number of swill-fed cows is about 13,000, but their value is, as a general thing, considerably less than those from the country. In the market they will sell for more than one fourth less, but when fattened for sale, after they have become dry, and are so fortunate as to escape the diseases incident to their peculiar treatment, it is said that they will bring nearly as high a price as some of the best grass-fed cattle.

The fact of their being fed on grain and slops is, however, sufficient to depreciate them in the market. Allowing, therefore, about fifteen dollars as the value of each animal, we have a total of $195,000, or $55,000 less than the worth of the total number of country cattle. Yet with this slight decrease in

the amount of capital invested, there is an immensely disproportionate augmentation in the profits realized, the profit on the swill milk being about two thirds greater than that realized on the sale of the pure country article.

It should be remembered, however, in this calculation, that it is adulterated in a proportion of more than one fourth, and also that the expenses of swill milkmen are much less than that of farmers. It is true, a large number of their cattle die, but they have not to pay for the transportation of their milk, and the saving in this respect alone would more than make up for the labor, time, and money expended in sending it over the railroads, to say nothing of the wear and tear of cans, etc. The number of quarts daily produced by these establishments, assisted by the small milk dealers, in whose hands it undergoes a remarkable increase, may be fairly estimated at 180,000 or 65,700,000 quarts yearly. Calculating this amount at four and a half cents per quart, we have a grand total of nearly $3,000,000.

There are of course, a great many persons employed in the distribution of this milk, in New

York, Williamsburgh, Jersey City, besides those whose business it is to attend to the feeding of the cattle. They number altogether about 1,200, each having a separate route to serve. The weekly salary of each of these men amounts to about six dollars. The number of horses employed does not exceed 800 at the utmost, the total value of which might be set down at $80,000, which, by the addition of wagons, cans, etc., is increased to about $180,000. The following table presents as accurate a statement as it is possible to give, of the total amount of property invested in the business:

Total value of horses employed in the distribution of both kinds of milk	$125,000
Value of carts, cans, and other utensils	184,000
Value of cows in country and city	445,000
Total	$754,000

Here we have a total of $754,000, the full amount of capital invested in what may be called the movable property or stock, independent of the still larger amount in the form of land, houses, etc., or immovable property. The total yearly receipts derived from the sale of milk may be summed up in the following manner:

Amount received for pure country milk	$1,350,000
Amount received for *pure* swill milk	2,550,000
Amount received for water, chalk, magnesia, molasses, etc.	1,250,000
Total	$5,150,000

Little do the people of New York, and of the cities in its vicinity, imagine the vast amount they pay yearly for this one article of food, and but for the statement before us, which may be regarded as reliable, it would be almost incredible. The immense sum of more than $3,000,000 yearly expended in the purchase of an article of the most deleterious character! Should the great mortality among children be any longer a subject of wonder?

It would be wrong, however, to suppose that all this milk is consumed in its original form; perhaps not more than a proportion of one third of a quart, daily, to each individual in the aggregate population of New York, and the adjoining cities, is so used, and of this the largest amount is consumed by infants. Of the 300,000 quarts* of all kinds sold in this way, the greatest proportion is used in

* This is the largest quantity sold in any one day during the summer months, when the supply is more abundant than at any other season.

hotels, restaurants, and in the manufacture of all kinds of confectionery. In the summer season particularly, there is a great demand for it in the form of ice cream, and it is said that one of the largest saloons in the city used over 500 quarts in one day, in the manufacture of this article alone. It is thus made a source of perhaps still greater profits to others, than it is to the original dealers.

Chapter Ten.

Necessity for an Ordinance to regulate the Sale of Milk, and to prevent its Adulteration—History of the Orange County Milk Association.

In the last chapter we endeavored to show the great importance of the milk trade in this city, by presenting statistics in relation to the capital invested in it, the amount yearly expended in the consumption of milk, and the number of persons engaged in the business. The attention of the public has been frequently called to the existence of the swill stables in and about New York, the sale of the milk produced in these establishments, and the injurious consequences resulting from its use; but little or nothing has, so far, been effected toward the removal of these grievances.

Other matters, of much less importance to the public interest, have enlisted the particular consideration of our law makers, while this one, affecting

so strongly as it does the health of the city, has been strangely neglected. An ordinance was passed some years ago, prohibiting the sale of diseased meat, under a penalty of twenty-five dollars, and Congress has made a law punishing also by fine the sale of adulterated drugs. The use of adulterated drugs is not attended with the same serious consequences as the use of impure milk, for the ingredients employed in their adulteration are generally of a harmless nature, merely diminishing the strength without injuriously affecting the quality. But it is quite different with the production and adulteration of swill milk and what comes from the country.

What, then, should be done to put a stop to the grievances complained of? It is said, that notwithstanding the stringent measures adopted by Congress to prevent the sale of adulterated drugs, the forbidden traffic is still carried on as extensively as ever, and that a large amount of diseased meat may be found exposed for sale in the stalls of some butchers, in defiance of the ordinance which punishes the practice with a penalty. In Paris, where formerly a great quantity of impure milk was con-

sumed, much greater than in New York, a *douane*, or custom-house, for the collection of duties on milk, has been established. All the milk that passes through this custom-house is examined before the owners are allowed to distribute it. This system is very successful in Paris, but in New York it might be considered of very doubtful utility, in consequence of the unfavorable feeling with which custom-houses are generally regarded by the people; besides which, it might be converted into a subject for the pecuniary speculations and advantage of politicians, and thus be diverted from the beneficial purposes for which it should be established. We merely mention the existence of such an institution in Paris, not as an example for our imitation, but to show the importance which the municipal government of that city attaches to the milk trade.

Next to the establishment of country milk associations, which was recommended in a former chapter, an ordinance for the licensing of milk wagons would be the most effective means that could be adopted to prevent the sale of unhealthy milk. To render it thoroughly effectual, it would be necessary

to include in its requirements a provision imposing a penalty of twenty dollars upon every driver who might be detected in selling the prohibited article. As in the granting of the licenses to the drivers of other vehicles, a certificate of recommendation of good character is required, it would be well to make some such rule for them.

In this way many of the abuses which at present exist among the drivers of milk wagons might be remedied. If an ordinance of this kind were once passed, it would afford a means of protection to the consumers of milk, who, in cases of fraud in the quality of the article with which they were supplied, could prefer a complaint before the city marshal or other officer, invested with the power of punishing such offences. At present the people have no means of redress except in the general police laws, which can with difficulty be brought to bear upon offenses of this character. The milk wagons have no numbers upon them, their drivers appear to be independent of all law, make use of many of the privileges possessed by other cartmen, and help in wearing out the pavements without paying a single cent to the city treasury. Why they should be

exempted from the same regulations which govern other drivers would be difficult to determine.

An ordinance similar to that we have briefly sketched, with one or two additional provisions, that experience or further consideration on the subject might suggest to secure its successful operation, together with the establishment of milk associations throughout New York and the adjoining cities, would do more toward the suppression of the sale of unhealthy milk, and of the swill nuisances, than all that has ever been written upon the subject. Something practical must be done before we can be supplied with good, healthy milk. For those who are concerned in this matter, and who might desire to engage in an enterprise like that we have suggested, the following account of the Orange County Milk Association may possess some interest:

The association was established in March, 1844, at a time when the strongest opposition was manifested by the swill milk dairies against the introduction and sale of pure country milk. The stock was divided into twenty shares, of $250 each, making a capital of $5000. The inexperience of the association in the business was attended with

serious pecuniary loss for the first year or two. The Erie Railroad had been opened but a short time before, and the facilities for the transportation of the milk were so deficient, as to cause much irregularity in its delivery to the association. Added to this difficulty was another, equally discouraging to the company, and detrimental to the successful prosecution of their business—the farmers knew nothing about cooling the milk, a process so very necessary to prevent it from becoming sour.

When these obstacles in the way of their success were removed, the business became profitable, and the proprietors were enabled to contend against the hostility of the swill milkmen with better fortune. The proprietorship of the concern changed two or three times, until it finally came into the possession of the present owners, of whom there are ten altogether. Under their management the business has largely increased, and the stock is now valued at ten thousand dollars. They are under the government of certain rules, and their affairs are conducted, to use a stereotyped phrase of the day, with "punctuality and dispatch." All questions are

decided by a majority vote, with the exception of alterations in the rules, which require eight votes to render them constitutional.

Such business matters as are not provided for otherwise are left to the management and decision of a committee of three, who are also required to report the delinquencies of any member who may be found negligent in the performance of his duty. This committee is elected for one year, and is itself responsible to the association for all its acts. The committee elect a chairman, whom they intrust with the executive power, and who presides over all the meetings of the company. Not more than four or five members live in the city, the remainder attending to the business in the country. One of these is elected as country agent, whose duty it is to make all contracts and arrangements for the necessary supply of milk, and its transportation to the city.

The country members are generally farmers, and supply a large proportion of the milk sold by the association, making up the deficiency by purchasing from other farmers living in their neighborhood. The city agent attends to the sale of the milk in New York, Brooklyn, and

Jersey City; gives instructions to the drivers as to the manner and time of its distribution; collects and pays all bills, rendering an account of his transactions at the end of every month, when the books of the establishment undergo a regular investigation, and the dividends are made. One half the profits are distributed *pro rata* among the stockholders, and the other half deposited in a savings bank or invested in public stocks for a sinking fund, from which the stock account of the association may be replenished by a vote of the majority.

All contracts for over one hundred and fifty dollars require a majority of votes to render them valid, and then they must be certified by the president.

The Orange County Milk Association transacts the most extensive business of any establishment of the kind in the city, distributing at present 7,000 quarts of milk daily. Of this quantity, 6,000 quarts are obtained from Orange county, and 1,000 quarts from Dutchess county. To distribute this, twelve wagons are kept constantly employed, each of which serves between five and six hundred quarts daily. A collector is regularly in attendance in

the office of the association, on the corner of Washington and Jay streets, to wait upon families at their places of residence, to furnish tickets, which are received by the drivers in payment for the quantity of milk served, and to rectify all causes of complaint.

The quantity distributed among private families every day amounts to 2,500 quarts, and the remaining 4,500 are purchased by hotels, restaurants, and grocers. Among the customers of the association are the New York Hospital, and a large number of physicians. The establishment of associations of this description in New York would be marked by a decrease in the infant mortality, and should be encouraged as the most effectual means of removing the abuses to which we have referred.

Chapter Eleven.

Importance of Milk as an article of Diet—Infant Mortality produced by Impure Milk—Chemical Analysis of different kinds of Milk—A Case of Fatal Milk Sickness—Nutritious Properties of Milk—Conclusion.

"Milk," says a writer on the subject in *Les Annales d' Hygienne Publique de Paris*, "is an object of great importance to man. It is the first food nature provides for him, and during his life he makes frequent use of it, sometimes from choice, and sometimes from necessity, when his digestive organs are impaired by sickness. It is not, therefore, wonderful," adds the writer, "that in every age this liquid should have attracted considerable attention." In its natural state, it is regarded by physicians as one of the most nutritious articles of human food, and is therefore desirable for persons of a weak and sickly constitution. But when rendered impure by adulteration, or produced by artificial means, its effects on the health of sick persons,

and particularly on the health of children, is most deleterious, not unfrequently causing death. In New York, where a large proportion of the children are dependent upon cow's milk mainly for subsistence, unusual mortality prevails among them. In the weekly report of the City Inspector, the deaths among children between one and ten years of age is often two thirds of the whole, and always more than one half. Various names are given to the diseases which have caused their death, such as marasmus, consumption, diarrhea, dysentery, etc., but a considerable proportion of these diseases is produced by the use of adulterated and swill milk. Physicians who have any practical experience can tell from the appearance of a sick or unhealthy child if its ill health has been caused by it, and if it has, will immediately order a change in its food.

In the nursery hospital on Randall's Island, where there are between two and three hundred children, kept at the expense of the city, the greatest circumspection is exhibited in their treatment and diet. The quantity of milk consumed monthly exceeds five thousand quarts, all of which is pure country milk, furnished as it comes from the cow.

The good effects resulting from its use are visible in the health of the children, and the entire absence of any of those diseases which are invariably produced by impure milk. In proportion to the population of the institution, the yearly mortality is less than one half that among the children of the city. This fact is mainly attributable to the cause we have assigned.

The slop milk is remarkable for the great length of time which it takes to coagulate, and for the small proportion of butter and other nutritious ingredients which it contains. The butter which it affords is whiter than that obtained from any other kind, and in forming associates itself with more curd and whey. Dr. Reid, who was formerly Professor of Chemistry in the New York Hospital, and who has analyzed various kinds of milk, says, that it requires five hours longer than Orange county milk to coagulate.

This peculiar property, which renders it so deleterious, and frequently so fatal to the health of children, requiring, as it must, such unnatural exertion of the digestive organs, causes dysentery, diarrhea, and sometimes convulsions. The follow-

ing table presents an analysis, made by Professor Reid, of six descriptions of milk:

	No. 1.	2.	3.	4.	5.	6.
Water	873.00	860.00	869.10	876.10	888.00	898.00
Butter	30.00	35.00	15.00	14.00	13.00	10.00
Casein	48.20	45.00	62.00	59.00	50.00	45.00
Sugar of milk	43.90	53.00	44.00	42.00	41.00	40.00
Phosphate of lime	2.31	3.35	4.20	4.00	3.20	2.80
Phosphate of magnesia	.42	.76	1.84	1.56	1.41	1.20
Phosphate of iron	.07	.09	.12	.11	.10	.07
Chloride of potassium	1.44	2.00	2.97	2.51	2.46	2.35
Chloride of sodium	.24	.36	.44	.42	.43	.40
Soda in combination with the casein	.42	.50	.43	.40	.40	.30
	1,000	1,000	1,000	1,000	1,000	1,000

No. 1 is an analysis of European milk; No. 2 of Orange county milk; and Nos. 3, 4, 5, and 6, are analyses of four samples of distillery milk. From this table it appears that the Orange county milk is superior even to that produced in Europe, if the kind analyzed may be regarded as a fair specimen; but so different is the swill milk from either, that the proportions of its component parts differ very materially. It does not contain one half the amount of butter, while the other ingredients of which it is composed, and which are not so very essential as nutrients, are in greater quantity.

The unnatural disproportion in which the parts are mixed, may also be considered as one of the causes of its injurious effects upon the human system. Dr. Charles A. Lee, in a letter published in an excellent work on milk, by R. M. Hartley, Esq., gives an account of a patient under his charge, who was afflicted with what might not improperly be termed milk sickness. The boy, he says, was six years of age, and had been literally brought up on still-slop milk. His parents kept a few cows in the upper part of the city, which they fed upon swill, and supported themselves by the sale of their milk. He was always pale and sickly, had a rickety, bloated appearance, and his sunken eyes and haggard expression of countenance reminded one continually of a little, premature old man. About a year before his death he began to fall away in flesh; grew weak and irritable; had little appetite, and so languished till he died. A post-mortem examination resulted in some remarkable discoveries; there was an almost entire absence of blood from the system; the muscles were pale, flabby, and greatly reduced in size; the blood-vessels about the heart, which are generally loaded with blood,

were collapsed and empty, and the heart itself was soft.

The principal marks of disease he found, were in the mesenteric glands, which are situated near the chyliferous vessels, through which all the nutriment that is absorbed has to pass, in its passage to the thoracic duct. These glands were most extensively diseased, more than ten times their usual size, and many of them in a high state of inflammation. This fact accounted for the gradual emaciation of the child, his want of strength, and ultimate death.

This is only one case out of hundreds which might be related, in proof of the fatal effects which generally result from the use of swill milk.

When it is adulterated it becomes, of course, still less innutritious—the process of digestion is rendered more difficult, and the death of the child hastened. It also affects the teeth of children, causing them to decay prematurely, and making them so soft that in some cases they can be cut with a dentist's instrument; while the teeth of children who have been properly nourished, and whose con-

stitutions are sound, possess almost a diamond-like hardness.

Good milk contains, as is well known, all the elements necessary not only for the nutrition, but the growth of the body. Out of the casein of milk are formed the albumen and fibrin of the blood, and the proteinaceous and gelatinous tissues. The butter serves for the formation of fat, and contributes, with the sugar, to support the animal heat by yielding carbon and hydrogen to be consumed in the lungs. The earthy salts are necessary for the development of the osseous or bony system; the iron is required for the blood corpuscles, and the hair; while the alkaline chloride furnishes the hydrochloric acid of the gastric juice. Ewe's milk contains the largest amount of nutritive matter (casein and butter); but on this account is less easy of digestion, and therefore unfitted for dyspeptics. Goat's milk is considered next to this, but is also unfit for persons afflicted with dyspepsia; it is, however, said to be useful in checking obstinate diarrhea. Ass's milk is the least nutritious, but the most easy of digestion, and with the exception of human milk, it is the richest in sugar of milk.

In the convalescence from acute maladies, in consumptive cases and chronic diseases of the digestive organs, it is a most valuable aliment.

Good milk, when examined by the microscope, is found to contain only spherical, transparent globules, soluble in alkalies and ether. It also yields, says Dr. Pereira, in his Treatise on Food and Diet, a flocculent precipitate with acetic acid. It is not a difficult matter for those who have been accustomed to the use of good milk to detect the adulterated or swill milk by its peculiar taste and smell, but with those who have never used any other it is quite different. We heard of a man once who having been served with pure country milk for the first time, and not being able to account for its rich yellow color, and the unusual quantity of cream, ordered it to be thrown out as unfit for use, and it required considerable trouble to persuade him of his error. To prove that swill milk is generally regarded by the medical faculty as most injurious to the health of children, it is only necessary to refer our readers to the following statement, which was, at the solicitation of Mr. Hartley, signed by fifty-eight medical gentlemen of this city: "The undersigned, physicians of

the city of New York, being requested to express our opinion in relation to the milk of cows fed chiefly on distillery slop, have no hesitation in stating, that we believe such milk to be extremely detrimental to the health, especially of young children, as it not only contains too little nutriment for the purposes of food, but appears to possess unhealthy and injurious properties, owing in part, probably, to the confinement of the cows, and the bad air which they consequently have to breathe, as well as the unnatural and pernicious nature of the slop on which they are fed."

For many of the scientific facts which we have given in this chapter we are indebted to Mr. Hartley's Essay on Milk, A Treatise on Food and Diet, by Charles A. Lee, *Annales d'Hygienne Publique de Paris*, and other works.

LRB Ja'30

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